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Serial No. 10/566,053  
Reply to Office Action dated June 10, 2010

Docket No. 1006/0148PUS1

**REMARKS/ARGUMENTS**

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1-36 are pending in the above application, of which claims 1, 26 and 36 are independent.

The Office Action dated June 10, 2010, has been received and carefully reviewed. In that Office Action, claims 1-4, 9-19, 21, 23, 26 and 28-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1070928 ("hereinafter, "Daikin") in view of Dahlgren, claims 5-7 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Wand, and claims 8 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Joel. Claims 24, 25 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Leuthner, claims 33-35 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Heil, and claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heil in view of Wand. Each of these issues is addressed below, and reconsideration and allowance of claims 1-36 is respectfully requested in view of the above amendments and the following remarks.

**REQUEST FOR WITHDRAWAL OF PREMATURE FINALITY**

MPEP 706.07(a) provides in part: "[u]nder present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor...." In response to the previous Office Action, claim 26 was rewritten in

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independent form; however, the scope of that claim was not changed. In the first Office Action, claim 26 was rejected under 35 U.S.C. 102(b) as being anticipated by Daikin. In the present Office Action, claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren. It is respectfully submitted that rewriting claim 26 in independent form did not necessitate this new ground of rejection. It is therefore respectfully submitted that the finality of the present Office Action is premature, and the withdrawal of the finality of the Office Action is respectfully requested.

#### REJECTIONS UNDER 35 U.S.C. 103(a)

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren. Claim 1 recites, inter alia, a heat exchanger for motor vehicles that is formed from interconnected plates, there being formed between the plates cavities which are closed off outwardly and through which a first and a second medium flow alternately in each case via at least one inflow line and outflow line. The plates are profiled in such a way that, between the respective profiles of the plates, contact points occur, in the region of which the plates are fastened to one another, wherein the profiles of the plates and their contact points are designed in such a way that the flow, formed between the plates, of the first and the second medium from the corresponding inflow line to the corresponding outflow line does not run rectilinearly. In addition, the plates have a recurring wavy profile comprising legs running rectilinearly between regions of curvature.

Applicant previously argued that Daikin does not include at least plates having a

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recurring wavy profile comprising legs running rectilinearly between regions of curvature. In response to that argument, the examiner indicated that Dahlgren includes plates having a recurring wavy profile comprising legs running rectilinearly between regions of curvature. The Office Action also indicates that one of ordinary skill in the art would have modified Daikin based on Dahlgren to "provide a turbulent flow pattern to enhance heat transfer between the two fluids." It is respectfully submitted that Dahlgren does not appear to show at least the limitation of "a recurring wavy profile comprising legs running rectilinearly between regions of curvature," and thus even if combined, the references do not suggest the invention of claim 1. Moreover, nothing in the record supports that assertion that the proposed modification would "enhance heat transfer" as stated in the Office Action. A proper reason for modifying Daikin is therefore also not provided. Each of these issues is addressed below.

The Dahlgren reference has been carefully reviewed, but it does not appear to suggest "a recurring wavy profile comprising legs running rectilinearly between regions of curvature" as stated in the Office Action. With reference to Figure 2, for example, all ridges in the twelve central rectangles appear to be linear - there are no regions of curvature. Likewise, except for the four circular openings at the corners of the plate, all other elements appear to be linear as well. It is therefore respectfully submitted that Dahlgren does not show or suggest at least a recurring wavy profile comprising legs running rectilinearly between regions of curvature and suggests no change to Daikin that would result in the invention of claim 1. Claim 1 is submitted to be allowable over Daikin in view of Dahlgren for at least this reason.

If the rejection of claim 1 is maintained, it is respectfully requested that the

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examiner explain in more detail what elements of Dahlgren are believed to correspond to "a recurring wavy profile comprising legs running rectilinearly between regions of curvature" and in particular point out what portion of Dahlgren is believed to constitute a "region of curvature" so that the basis for this rejection can be better understood.

Assuming, for sake of argument only, that Dahlgren shows a recurring wavy profile comprising legs running rectilinearly between regions of curvature, it is respectfully submitted that the record contains no reason to modify Daikin based on any teaching of Dahlgren. As provided by *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), a rejection must include a reason to modify a primary reference. Without such a reason, a prima facie case of obviousness cannot be established. The Office Action indicates that the proposed modification would "provide a turbulent flow pattern to enhance heat transfer between the two fluids." However Daikin already provides a turbulent flow pattern and provides for heat transfer between two fluids. The Office Action therefore appears to be asserting that the modification to Daikin will provide for better heat transfer than what is already provided by Daikin. It is respectfully submitted that there is no basis in the record for this assertion. It is possible, based on the present record, that the proposed modification would actually decrease heat transfer. The record contains no information that would lead a person of ordinary skill in the art to think that the proposed modification would enhance heat transfer in Daikin. A proper reason for modifying Daikin has not been provided, a prima facie case of obviousness has not been presented, and claim 1 is submitted to be allowable over Daikin in view of Dahlgren for at least this reason.

If the rejection of claim 1 is maintained, it is respectfully requested that the

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examiner explain for the record how the proposed modification to Daikin would provide for "enhanced" heat transfer compared to the heat transfer that is already provided by Daikin.

Claims 2-25 and 27-35 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

Claim 26 recites, in addition to many of the limitations of claim 1, that contact points between two plates adjacent to one another are distributed uniformly over the plate surface. Daikin includes ridges and valleys that "engage" one another (paragraph 0064); in other words, ridges from one plate extend into the valleys of an adjacent plate. No contact between the ridges and valleys is described; instead, it appears that Daikin shows that the plates are attached around their peripheries and near the inlet and outlet openings. In the "Response to Arguments" section of the Office Action, the examiner refers to paragraph 64 of Daikin to show uniformly distributed contact points. However, that paragraph of Daikin merely indicates that ridges "extend into" valleys - there is no description of any contact points. Indeed, if the ridges and valleys follow the same pattern, there would be no contact therebetween. Applicant maintains that Daikin does not show or suggest at least this limitation of claim 26, and Dahlgren does not address this deficiency. Claim 26 is submitted to be allowable for at least this reason.

If the rejection of claim 26 is maintained, it is respectfully requested that the examiner explain more clearly where Daikin discloses contact points, uniformly distributed or not, between ridges and valleys so that the basis for this rejection can be better understood.

Claims 5-7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable

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over Daikin in view of Dahlgren and further in view of Wand. Claims 5-7 and 20 depend from claim 1. Wand does not address the shortcomings of Daikin and Dahlgren discussed above in connection with claim 1. Claims 5-7 and 20 are therefore submitted to be allowable for at least the same reasons as claim 1. It is also noted that the rejections of claims 7 and 20 refer to "ALFA-LAVAL," a PCT reference used in the previous rejection but that is not applied in the present Office Action. Based on the column and line numbers cited in the present Office Action, it appears that the examiner intended to refer to Alfa-Laval in the present Office Action as well. However, ALFA-LAVAL is not used in any rejection, and it is not clear what combination of references the examiner intended to use to reject claims 7 and 20. Clarification as to what references are being applied against claims 7 and 20 is respectfully requested if these claims are not allowed.

Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Joel. Claims 8 and 22 depend from claim 1. Joel does not address the shortcomings of Daikin and Dahlgren discussed above in connection with claim 1. Claims 8 and 22 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 24, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daikin in view of Dahlgren and further in view of Leuthner. Claims 24, 25 and 27 depend from claim 1. Leuthner does not address the shortcomings of Daikin and Dahlgren discussed above in connection with claim 1. Claims 24, 25, and 27 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over

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Daikin in view of Dahlgren and further in view of Heil. Claims 33-35 depend from claim 1. Heil does not address the shortcomings of Daikin and Dahlgren discussed above in connection with claim 1. Claims 33-35 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heil in view of Wand. Claim 36 recites a heat exchanger for motor vehicles formed from interconnected plates, there being formed between the plates cavities connected to at least one inflow line and at least one outflow line to define first and second alternating flow paths. Claim 36 also recites that the plates are embossed with a zig-zag profile comprising leg portions connected by curved portions, the leg portions in section comprising ridges having flat tops and valleys having flat bottoms, and that portions of the flat tops of a first one of the plates contact portions of the flat bottoms of an adjacent one of the plates at contact points. The contact points are arranged to prevent fluid from flowing between the first one of the plates and the second one of the plates rectilinearly from the inflow line to the outflow line.

Heil does not show zigzag profiles comprising leg portions connected by curved portions as stated in the Office Action. Figure 1 of Heil shows that V-shaped patterns that do not include curved portions as recited in claim 36. Wand also does not show such a feature. Claim 36 patentably distinguishes over Heil and Wand for this reason. Furthermore, Heil shows a heat exchanger in which a fishbone shaped pattern of ridges with the "patterning meshing at least partially, while maintaining a minimum spacing (column 2, lines 2-3)." Thus, the patterns do not contact each other as stated in the Office Action. Instead, a spacing is maintained, using, for example, spacing elements

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25. No contact between the fishbone patterns is disclosed, and the record contains no reason to modify Heil in a manner directly contrary to Heil's teaching of maintaining a minimum spacing.

The reason for modifying Heil based on Wand is stated to be to improve contact between the plates. However, as discussed above, Heil maintains a minimum spacing and does not teach contact between the ridges and valleys. There is therefore no reason to seek to improve such non-existent contact. For these reasons, claim 36 is submitted to be allowable over Heil in view of Wand.

If the rejection of claim 36 is maintained, it is respectfully requested that the examiner explain 1) how Heil's V-shaped patterns are being interpreted as leg portions connected by curved portions, 2) where Heil teaches contact between plates that are described as being spaced apart, and 3) why one of ordinary skill in the art would modify Heil's ridges based on Wand to improve contact when Heil's ridges do not contact adjacent ridges as suggested by the Office Action.

### **CONCLUSION**

Each issue raised in the Office Action dated June 10, 2010, has been addressed, and it is believed that claims 1-36 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.



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*Deposit Account Authorization*

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,

  
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